

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 414/04401	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/IL2005/000139	International filing date (day/month/year) 04/02/2005	(Earliest) Priority Date (day/month/year) 05/02/2004
Applicant REABILITY INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 7 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☒ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 5

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

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Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

An apparatus for rehabilitation, comprising, an elongate object (210,402,506) adapted to be hand-held and manipulated using fingers and be used in a task; and a fine motion mechanism (208,508) coupled to said object and adapted to apply force to said object, sufficient to at least move said object.

INTERNATIONAL SEARCH REPORT

Int'l Application No
PCT/IL2005/000139

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61H1/02 A63B23/12 A63B23/16 G09B11/00 G09B9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61H A63B G09B G06F A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 397 865 A (PARK ET AL) 14 March 1995 (1995-03-14) column 2, line 65 - column 10, line 56 column 12, lines 24-28; figures 1a,1c,1d,2	1-16, 21-29
X	US 2002/064438 A1 (OSBORNE WILLIAM JOSEPH ET AL) 30 May 2002 (2002-05-30) paragraph '0169!; figures	1-4,7, 12,17-20
X	US 6 057 828 A (ROSENBERG ET AL) 2 May 2000 (2000-05-02) column 15, line 63 - column 16, line 65; figures 1,7	1-20, 23-29
X	US 6 061 004 A (ROSENBERG ET AL) 9 May 2000 (2000-05-09) figures 1,2,7a,7b	1-21, 23-29
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

23 May 2005

Date of mailing of the international search report

02/06/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Fischer, E

INTERNATIONAL SEARCH REPORT

In International Application No
PCT/IL2005/000139

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 919 691 A (NOLL ET AL) 11 November 1975 (1975-11-11) column 3, lines 54-60; figure 2 -----	1-20, 23-29
X	JP 2002 127058 A (SANYO ELECTRIC CO LTD) 8 May 2002 (2002-05-08) the whole document -& PATENT ABSTRACTS OF JAPAN vol. 2002, no. 09, 4 September 2002 (2002-09-04) & JP 2002 127058 A (SANYO ELECTRIC CO LTD), 8 May 2002 (2002-05-08) abstract -----	1-22
X	JP 11 253504 A (SANYO ELECTRIC CO LTD) 21 September 1999 (1999-09-21) paragraphs '0001! - '0023!; figures 1-3 -& PATENT ABSTRACTS OF JAPAN vol. 1999, no. 14, 22 December 1999 (1999-12-22) & JP 11 253504 A (SANYO ELECTRIC CO LTD), 21 September 1999 (1999-09-21) abstract -----	1-8, 10-20
X,P	WO 2004/050172 A (KINETIC MUSCLES, INC; KOENEMAN, EDWARD, J; KOENEMAN, JAMES, B; HERRING) 17 June 2004 (2004-06-17) the whole document -----	1-8, 10-20

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Claims Nos.: 30-36

Claims 30-36 are directed to methods for treatment of the human or animal body by therapy - Article 17(2)(a)(i), Rule 39.1(iv) PCT.

In particular, independent claims 30, 33 include medical treatment steps like using an actuator to assist movement of an arm or of fingers of a person, the purpose and inevitable effect being therapeutic, namely rehabilitation of lost limb control.

INTERNATIONAL SEARCH REPORT

International application No.
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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 30-36
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/IL2005/000139

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5397865	A	14-03-1995	NONE	
US 2002064438	A1	30-05-2002	US 2001056313 A1	27-12-2001
US 6057828	A	02-05-2000	US 5731804 A	24-03-1998
			US 5767839 A	16-06-1998
			US 2003030621 A1	13-02-2003
			US 6437771 B1	20-08-2002
			AU 5167896 A	07-08-1996
			CA 2210725 A1	25-07-1996
			DE 69632028 D1	06-05-2004
			DE 69632028 T2	09-12-2004
			EP 0804786 A1	05-11-1997
			JP 10512983 T	08-12-1998
			WO 9622591 A1	25-07-1996
			US 6400352 B1	04-06-2002
			US 6201533 B1	13-03-2001
			US 6271828 B1	07-08-2001
			US 5721566 A	24-02-1998
			US 5805140 A	08-09-1998
			US 6850222 B1	01-02-2005
			US 2001020937 A1	13-09-2001
			US 2004164959 A1	26-08-2004
			US 2002018046 A1	14-02-2002
			US 5929846 A	27-07-1999
			US 6246390 B1	12-06-2001
			US 6154198 A	28-11-2000
			CA 2167304 A1	26-01-1995
			US 2002063685 A1	30-05-2002
			US 6219033 B1	17-04-2001
			US 6300937 B1	09-10-2001
			WO 9502801 A1	26-01-1995
			US 6125337 A	26-09-2000
			US 6046727 A	04-04-2000
			US 5576727 A	19-11-1996
			US 6366273 B1	02-04-2002
			US 5724264 A	03-03-1998
			US 5739811 A	14-04-1998
			US 5734373 A	31-03-1998
			US 5701140 A	23-12-1997
			US 5880714 A	09-03-1999
			US 2001030658 A1	18-10-2001
			US 2002033841 A1	21-03-2002
US 6061004	A	09-05-2000	US 6154201 A	28-11-2000
			US 6686911 B1	03-02-2004
			US 2004100440 A1	27-05-2004
US 3919691	A	11-11-1975	NONE	
JP 2002127058	A	08-05-2002	NONE	
JP 11253504	A	21-09-1999	NONE	
WO 2004050172	A	17-06-2004	AU 2003297652 A1	23-06-2004
			WO 2004050172 A1	17-06-2004
			US 2004267331 A1	30-12-2004

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/IL2005/000139

International filing date (day/month/year)
04.02.2005

Priority date (day/month/year)
05.02.2004

International Patent Classification (IPC) or both national classification and IPC
A61H1/02, A63B23/12, A63B23/16, G09B11/00, G09B9/00

Applicant
REABILITY INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 56.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Fischer, E

Telephone No. +49 89 2399-7290



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IL2005/000139

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IL2005/000139

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 30-36

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the whole application or for said claims Nos. 30-36

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form ☐ has not been furnished

☐ does not comply with the standard

the computer readable form ☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See separate sheet for further details

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IL2005/000139

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-29
Inventive step (IS)	Yes: Claims	
	No: Claims	1-29
Industrial applicability (IA)	Yes: Claims	1-29
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rules 43bis.1 and 70.10)

and /or

2. Non-written disclosures (Rules 43bis.1 and 70.9)

see form 210

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

Claims 30-36 relate to subject-matter considered by this Authority to be covered by the provisions of Rule 67.1(iv) PCT, namely to methods for treatment of the human or animal body by therapy. Consequently, no opinion will be formulated with respect to novelty, inventive step and industrial applicability of the subject-matter of these claims (Article 34(4)(a)(i), Rule 43bis.1(b) PCT).

In particular, independent claims 30, 33 include medical treatment steps like using an actuator to assist movement of an arm or of fingers of a person, the purpose and inevitable effect being therapeutic, namely rehabilitation of lost limb control.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

I. Documents

Reference is made to the following documents:

- D1: US-A-5 397 865;
- D2: US-A-2002/064438;
- D3: US-A-6 057 828;
- D4: US-A-6 061 004;
- D5: US-A-3 919 691;
- D6: JP-A-2002 127058;
- D7: JP-A-11 253504;
- D8: WO-A-2004/050172.

II. Requirements of Article 6 PCT - Clarity

1. The formulation "fine motion mechanism ... adapted to apply sufficient force to move the object" used in claim 1 is not clear, since the claim does not define any of those parameters necessary to determine the force. For example: What kind of object is used, how is the object held, how much force does the user apply, etc. ?

2. The claims as a whole are not clear, since they attempt to define the invention in terms of a result to be achieved, rather than defining the structural technical features that are necessary to perform the stated functions (PCT International Search and Preliminary Examination Guidelines 5.35): See e.g. claims 5-7, 18, 23.
3. According to independent claim 23 the apparatus comprises "a stylus extending upwards from the surface, and a motion mechanism [being] located under the surface". Thus, all embodiments according to Figs. 2, 3, 5 fall outside the subject-matter covered by this claim (PCT International Search and Preliminary Examination Guidelines 5.29).

III. Requirements of Article 33(2), (3) PCT - Novelty / Inventive step

1. Document D1 discloses (see especially Figs. 1a, 1c, 1d) (the references in parentheses applying to this document):

An apparatus for rehabilitation (the device of D1 is suitable for this intended use; see e.g. column 2, lines 66, 67), comprising:
an object (120) adapted to be hand-held by a person and manipulated using the fingers to perform a task; and
a fine motion mechanism (170, 184) coupled to said object and adapted to apply sufficient force to move the object (column 12, lines 24-28).

Since the subject-matter of independent **claim 1** does not differ therefrom, it is not novel (Article 33(2) PCT).

2. **Claim 1** is formulated extremely broadly, see especially:
 -) "apparatus for rehabilitation": This formulation is to be construed as meaning merely that the apparatus is suitable for this use (see also PCT International Search and Preliminary Examination Guidelines item 5.23). In the context of the present application, any device capable of applying a force to a limb sufficient to assist movement of the limb can be regarded as suitable for such an intended use.
 -) "fine motion mechanism": This relative term has no well-recognised meaning and thus cannot be used to delimit the claim from the prior art.

-) "object adapted to be hand-held ... and manipulated using the fingers": This feature can be construed to relate to the object as such, or to the object as coupled to the fine motion mechanism.

As a consequence, devices of different technical areas are novelty destroying (Art. 33(2) PCT):

-) D2, see embodiment according to Figs. 1-3; see also embodiment according to paragraph [0169].
 -) D3-D5, see relevant passages cited in the search report: These devices not only can be moved by the user, but also apply a force feedback to the user and actively move the object held by the user.
 -) D6, D7 disclosing rehabilitation devices for writing/eating that can be moved by a user, and apply forces to assist the user, as well.
3. All additional and/or differing features of independent **claim 23** compared to claim 1 likewise being known from D1 and D3, the subject-matter of this claim also lacks novelty (Article 33(2) PCT).
-) D1: The motion mechanism (170, 184) is located under the surface (105).
 -) D3: See esp. Fig. 7.
4. Dependent **claims 2-22, 24-29** do not contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, since all additional features are either explicitly disclosed in at least one of the documents D1-D4 or just relate to normal design procedures in this field (the references in parentheses applying to the respective document):

Claims 2-4: See e.g. D1, Fig. 1a; D6, Figs. 1,9; D7, Figs. 1, 2.

Claims 5, 6, 14, 15, 26: See e.g. D1, column 3, lines 9-11, column 4, lines 22, 23; D3, column 3, lines 58-60, column 18, lines 33, 34; D4, column 4, lines 5, 6, column 43, lines 19-22; D6, paragraphs [0017], [0048]; D7, paragraph [0022], force sensor (24).

Claims 7, 29: See e.g. D2, paragraph [0165]; D7, paragraph [0020]: shaking is detected.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/IL2005/000139

Claim 8, 9, 27, 28: See e.g. D1, column 3, lines 12-15; D6, paragraph [0017]; D7, paragraph [0013].

Claims 10-12, 16, 24, 25: See e.g. D1, Fig. 1c, 1d, column 12, lines 24-28; D3, Fig. 7, column 4, line 8; D6, paragraphs [0011], [0012], [0024]; D7, paragraphs [0007], [0019], [0021], [0022].

Claim 13: See D1, column 3, lines 46-51; D4, column 5, lines 17-19.

Claims 17-20: See D2, paragraph [0169]; D3, Fig. 7; D4, Fig. 2; D6, Fig. 1; D7, Figs. 1, 2.

Claims 21, 22: See esp. D1, Fig. 1a; D6, display (24).

Re Item VI

Certain documents cited

Certain published documents

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
WO-A-2004/050172	17.06.2004	03.12.2003	04.12.2002; 02.12.2003